

**REMARKS/ARGUMENTS**

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

In the third paragraph of the Advisory Action mailed November 16, 2004 (in response to the amendment filed October 26, 2004), the Examiner took the position that Radford discloses a short list of stabilizers and a short list of sintering aids. The Examiner concluded that "A particular combination from these two lists (absent specific teachings against any particular combination) requires only routine skill in the art."

Applicant respectfully but strongly disagrees with the Examiner's conclusion from the Radford disclosure. Indeed, contrary to the Examiner's characterization of Radford, Radford does not provide a "short list of sintering aids" from which the routiner may arbitrarily select. On the contrary, Radford specifically discloses that "The amounts of each sintering aid are critical since too much or too little can have little effect or even the opposite effect". (column 3, lines 20-22). Moreover, the disclosure of sintering aids is not simply a list of sintering aids from which the routiner may choose, but rather Radford's disclosure at column 3, lines 6-20 specifically recites the upper and lower limits of a particular sintering aid with respect to a combination of a particular stabilizer and that sintering aid. Thus, this disclosure of sintering aids matches and limits particular sintering aids with particular stabilizers. There is no disclosure whatsoever nor teaching in Radford that would encourage the person of ordinary skill in the art to add silica as a sintering aid in the case a yttria stabilizer is used. In fact, the use of silica as a sintering aid where the stabilizer is yttria is not disclosed in Radford and there is no motivation in Radford for the skilled artisan to add silica as a sintering aid in the case where a yttria stabilizer is used. Such a conclusion is only possible by picking and choosing among isolated descriptions from the Radford disclosure. Moreover, in the present case, it appears that the Examiner's selection of isolated teachings of Radford is improperly based on his hindsight knowledge of applicant's disclosure. To be proper,

rejections based on 35 USC §103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The Examiner has initial duty of supplying the factual basis for the rejection. The Examiner may not resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis. See In re Wanery, 379 F.2d 1011, 1017, 154 USPQ 173, 177-78 (CCPA 1967). Because none of the references of record discloses the details of the claimed invention lacking in the primary reference, nor the unique advantages thereof, there can be no suggestion to modify the primary reference to contain those features. See In re Civitello, 339 F.2d 243, 144 USPQ 10, (CCPA 1964).

In the fourth paragraph of the Advisory Action, the Examiner questioned applicant's comments regarding Kobayashi and requested clarification. Applicant replies as follows:

Kobayashi discloses, in column 3, lines 52-53, that "the cylindrical bodies were held at 1,600° C. in the air for 2 hours for firing to form fired products." Furthermore, in column 3, lines 58-61, it is disclosed that "Next, each oxygen sensor chip thus obtained was adhered to the end of an alumina non-electrolytic ceramic pipe with heat-resisting inorganic adhesives of alumina group."

From the above, it is apparent that Kobayashi discloses a sintered zirconia solid electrolyte bonded to the alumina pipe with an alumina inorganic adhesive. Because Kobayashi's sensor is based on the (already) sintered zirconia solid electrolyte and the alumina pipe bonded together, no silica of the solid electrolyte elutes into the bonding boundary. Therefore, Kobayashi's sensor fails to disclose the characteristic feature of the present invention, i.e., said bonding boundary including at least partly a crystal phase containing silicon dioxide. Thus, even if Mase '693 is combined with Kobayashi, the characteristic arrangement of the invention is not obtained.

In the fifth paragraph of the Advisory Action, the Examiner indicates that the point of Hayakawa is that zirconia having SiO<sub>2</sub> impurities can still provide an electrolyte with good mechanical properties. Applicant respectfully disagrees. Indeed, the invention disclosed by Hayakawa is based on the concept that silica should be removed. Thus, it is applicant's position that the present invention cannot properly be obtained by combining Mase '692 and Hayakawa because one of ordinary skill in the art would not consider adding the silica if he/she reads the entire disclosure of Hayakawa. It is respectfully submitted that it is only with hindsight knowledge of applicant's invention that the Examiner has selected only isolated teachings from the description of Hayakawa to support the proposed modification of Mase '693. However, Section 103 does not allow the Examiner to engage in picking and choosing from the prior art only to the extent that it will support a holding of obviousness, while excluding parts of the prior art essential to the full appreciation of what the prior art suggests to one of ordinary skill in the art. In re Wesslau, 147 USPQ 391 (CCPA 1975). Considering the teaching or information given to the skilled artisan from the description of Hayakawa, the skilled artisan would understand Kawakawa to be teaching the concept that silica should be removed. Under such circumstances, the invention claimed would not obviously be produced by a combination of Mase '692 and Hayakawa.

In view of the foregoing, reconsideration and allowance of this application are respectfully requested.

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Respectfully submitted,

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